

DUAL MAP SYSTEM FOR NAVIGATION AND WIRELESS COMMUNICATION

ABSTRACT OF THE DISCLOSURE

A system produces of an empirical map of wireless communication
5 coverage through a process of combining information from individual clients
to produce a map which is then shared by all of the clients. The wireless
coverage map aids in maintaining a reliable communications link. The
empirical map is generated by combining information from a group of mobile
wireless users. The group may consist of a fleet of trucks, taxicabs,
10 government service vehicles, or the customers of a wireless service provider.
The mobile vehicles must be equipped with a GPS device or be located by
other means such as triangulation. While vehicles are moving, the quality of
wireless communication, e.g., signal strength or communication continuity, is
recorded for each vehicle as a function of positions. The data from all of the
15 vehicles is combined to produce the empirical map. The empirical map may
be maintained at a central site and subsets of the map replicated for individual
vehicles. The map may then be used to direct mobile users to sites of superior
communications reliability, warn mobile users when they are out of the
service area or are about to leave the service area, or to regulate data
20 communications automatically to stop and restart communications as a mobile
vehicle passes through a gap in coverage.